JOB PROGRESS REPORT

As required by

FEDERAL AID IN FISHERIES RESTORATION ACT

TEXAS

Federal Aid Project No. F-2-R-20

FISHERIES INVESTIGATIONS REGION 2-B

Job No. B-26, Fishery Management Recommendations

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Summary

Preliminary meetings and public hearings to discuss fishing regulations were conducted in the Possum Kingdom and Edwards Plateau Regulatory Areas. Existing fishing regulations were considered to be adequate and no changes were recommended.

Lakes Belton, Buchanan, Canyon, Inks, Lyndon B. Johnson, Stillhouse Hollow, and Travis were surveyed during 1972. Recommendations concerning management of the above lakes were made as follows:

1. Canyon Lake should be stocked with walleye pike and/or smallmouth bass to provide additional sport fish species and to aid in the control of the large rough fish population.

2. Since Lake Travis is to be stocked with striped bass in the near future, a quarterly netting program should be instituted to determine the effects of the stocking.

3. Quarterly netting surveys should be continued on Lake Lyndon B. Johnson to evaluate the effects of the renovation in April of 1971. The effects of the steam generation plant now under construction on this lake should also be investigated.

4. There was no need for vegetative control measures in any of the lakes surveyed during 1972.

5. This job should be continued to provide valid fishery management recommendations for waters in Region 2-B through population data sampling.

JOB PROGRESS REPORT

State of Texas

Project No. F-2-R-20 Name: Region 2-B Fisheries Studies

Job No. B-26 Title: Fishery Management Recommendations

Contract Period: February 1, 1972 to January 31, 1973

P. S. OBJECTIVE:

To situate fishery management practices in the public waters of Region 2-B.

SEGMENT OBJECTIVES:

1. To propose fish harvest regulations for the waters of Region 2-B.

2. To recommend renovation or population control for waters which do not provide adequate sports fishing.

3. To recommend supplemental stocking of hatchery reared fish in newly impounded reservoirs, renovated reservoirs, waters which have sustained major fish kills and waters which have negligible natural reproduction.

4. To determine vegetation control needs.

5. To determine public access needs.

PROCEDURES:

1. Meetings were held between game management officers, biologists, and supervisory personnel to discuss existing hunting and fishing laws and to propose changes needed in the hunting and fishing regulations for the counties in the Edwards Plateau, Possum Kingdom, and Trinity-Brazos Regulatory areas. The proclamation resulting from the above meetings was presented to the public at hearings in each county under Regulatory Authority and to the Commissioners of the Texas Parks and Wildlife Department for their approval or disapproval.

2. Lakes Belton, Buchanan, Canyon, Inks, Lyndon B. Johnson, Stillhouse Hollow, and Travis were netted during this segment using standard experimental gill nets, 150 feet in length and 8 feet in depth. The mesh size ranged from 1 inch to 3½ inches. The mesh size increased in ½ inch increments with every 25 feet of net. A 20-foot common sense minnow seine with a depth of 4 feet and a mesh size of 3/8 inch was used in seining collections. Water quality determinations were made during each netting survey.

3. Observations were made during each survey to determine if aquatic vegetation was present in such quantities that access or fishability of fishing areas might be hampered.

4. Fishing pressures and the resulting need for additional public access sites were evaluated during each netting survey.

FINDINGS:

The data for Region 2-B is presented in a slightly different form for the year 1972. Graphs are used to present much of the netting data for 1972. Graphs are useful because they can be drawn to show pertinent information at a glance and data comparisons are generally easier to see than when they are presented in tabular form. The netting data is presented as catch per unit of effort (100 feet of net) since this form appears to be more useful than presenting it in percentages (refer to Figures 1 and 2).

Table 1 is a checklist of all fish species collected in Region 2-B during 1972.

Canyon Lake

Canyon Lake is a large (surface area=8,240 acres), deep (mean depth=47 feet) lake loacted entirely within Comal County. The lake was formed in 1964 by the impoundment of waters of the Guadalupe River. The lake is controlled by the Army Corps of Engineers and is used primarily for conservation, flood control, and irrigation.

Canyon Lake was netted quarterly during 1972. A total of 1,331 fish weighing 9,957.07 pounds were taken during four gill netting surveys from a total of 60 overnight, bottom gill net sets. Rough fish comprised 65.63 per cent of the catch by number and 61.47 per cent by weight, with gray redhorse suckers accounting for the greatest biomass. Game fish made up 20.23 per cent of the catch by number and 36.66 per cent by weight, with channel catfish and yellow catfish accounting for the greatest number and weight (Table 2).

Figure 1 shows a comparison of the number and weight of the rough, game, and sunfish taken during each quarterly netting survey. The ratio of rough fish to game fish to sunfish and the average size of these groups for each sampling period can be seen at a glance. The total weight and number of each group can be figured for each netting trip or for the entire year. Note the great difference in the number and weight of each group taken in each netting survey. One or two yearly netting surveys on a lake are not adequate. It is felt that quarterly or possibly bi-monthly netting surveys are necessary to make estimates of the size and ratio of fish species taken with gill nets.

Figure 2 shows the per cent composition of each group during each sample period but does not show their size or abundance.

For gill netting data to be of value it should show changes in fish production. By using gill netting data, one should be able to show the expected peak of fish production during a lakes third or fourth year of impoundment and then the decline in that lakes fish production until a more or less stable level is reached. A graph (Figure 3) was drawn from netting data taken quarterly from Canyon Lake for a period dating from 1965 (first year after the lake was impounded) through 1972. The average catch per 100 feet of net in weight and numbers of rough fish, game fish, and sunfish is shown for each year. The shape of the graph indicates that quarterly netting surveys are useful, since it does follow the expected curve.

-Table 1-

Common and Scientific Names of Fishes Collected in Region 2-B During 1972

Common Names	Scientific Names
Spotted gar	Lepisosteus oculatus
Longnose gar	Lepisosteus osseus
Gizzard shad	Dorosoma cepedianum
Rainbow trout	Salmo gairdneri
Mexican tetra	Astyanax mexicanus
Carp	Cyprinus carpio
Golden shiner	Notemigonus chrysoleucas
Weed shiner	Notropis texanus
Blacktail shiner	Notropis venustus
Red shiner	Notropis lutrensis
Smallmouth buffalo	Ictiobus bubalus
River carpsucker	Carpiodes carpio
Gray redhorse sucker	Moxostoma congestum
Spotted sucker	Minytrema melanops
Channel catfish	Ictalurus punctatus
Blue catfish	Ictalurus furcatus
Black bullhead catfish	Ictalurus melas
Yellow bullhead catfish	Ictalurus natalis
Flathead catfish	Pylodictis olivaris
Tidewater silverside	Menidia beryllina
White bass	Morone chrysops
Spotted black bass	Micropterus punctulatus
Largemouth black bass	Micropterus salmoides
Green sunfish	Lepomis cyanellus
Warmouth sunfish	L. gulosus
Bluegill sunfish	Lepomis macrochirus
Redear sunfish	Lepomis microlophus
Longear sunfish	Lepomis megalotis
Redbreast sunfish	Lepomis auritus
Spotted sunfish	Lepomis punctatus
White crappie	Pomoxis annularis
Black crappie	Pomoxis nigromaculatus
Freshwater drum	Aplodinotus grunniens
Rio Grande perch	Cichlasoma cyanoguttatum
Mozambique tilapia	Tilapia mossambica

-Table 2-

Results of Canyon Lake Gill Netting for 1972
60 Nets Set

Species	Number	Per Cent of Number	Weight (Pounds)	Per Cent of Weight	Average Weight
Longnose gar	26	1.95	61.49	3.14	2.37
Gizzard shad	441	33.13	202.15	10.33	0.46
Golden shiner	18	1.35	5.01	0.26	0.28
Carp	51	3.83	342.45	17.50	6.71
River carpsucker	15	1.13	89.20	4.56	5.95
Gray redhorse sucker	315	23.67	485.40	24.80	1.54
Yellow bullhead catfish	5	0.38	1.44	0.07	0.29
Channel catfish*	121	9.09	316.86	16.19	2.62
Flathead catfish*	55	4.13	303.02	15.48	5.51
Warmouth sunfish	38	2.85	7.58	0.39	0.20
Green sunfish	30	2.25	4.82	0.26	0.16
Redbreast sunfish	3	0.23	0.88	0.04	0.29
Bluegill sunfish	56	4.21	7.01	0.36	0.13
Longear sunfish	6	0.45	1.45	0.07	0.24
Redear sunfish	54	4.06	19.21	0.98	0.36
Largemouth black bass*	40	3.00	62.10	3.17	1.55
White crappie*	45	3.38	39.97	2.04	0.89
Black crappie*	1	0.08	1.75	0.09	1.75
Rio Grande perch	10	0.75	2.84	0.15	0.28
Mozambique tilapia	1	0.08	2.44	2.44	2.44
Total	1331	100.00	1957.07	100.00	

* Designates Game Fish Species

-Table 3-

Results of Lake L. B. J. Gill Netting for 1972
75 Nets Set

Species	Number	Per Cent of Number	Weight (Pounds)	Per Cent of Weight	Average Weight
Longnose gar	199	9.49	298.13	14.89	1.50
Gizzard shad	338	16.12	149.95	7.49	0.44
Golden shiner	1	0.05	0.31	0.02	0.31
Carp	224	10.68	381.21	19.04	1.42
River carpsucker	507	24.18	461.36	23.04	0.91
Smallmouth buffalo	109	5.20	96.30	4.81	0.88
Gray redhorse	19	0.91	8.83	0.44	0.46
Yellow bullhead	3	0.14	0.69	0.03	0.23
Black bullhead	25	1.19	6.08	0.30	0.24
Channel catfish*	54	2.58	83.81	4.19	1.55
Blue catfish*	2	0.10	4.75	0.24	2.38
Flathead catfish*	16	0.76	63.45	3.17	3.97
White bass*	230	10.97	238.21	11.89	1.04
Warmouth sunfish	21	1.00	11.60	0.58	0.55
Green sunfish	33	1.57	6.26	0.31	0.20
Redbreast sunfish	5	0.24	0.82	0.04	0.16
Bluegill sunfish	83	3.96	13.58	0.68	0.16
Longear sunfish	24	1.13	3.39	0.17	0.14
Redear sunfish	1	0.05	0.25	0.01	0.25
Largemouth black bass*	85	4.05	85.52	4.27	1.01
Spotted bass*	1	0.05	0.31	0.01	0.31
White crappie*	102	4.86	38.66	1.93	0.38
Black crappie*	1	0.05	0.50	0.02	0.50
Rio Grande perch	1	0.05	0.19	0.01	0.19
Freshwater drum	13	0.62	48.37	2.42	3.72
Total	2097	100.00	2002.44	100.00	

* Designates Game Fish Species

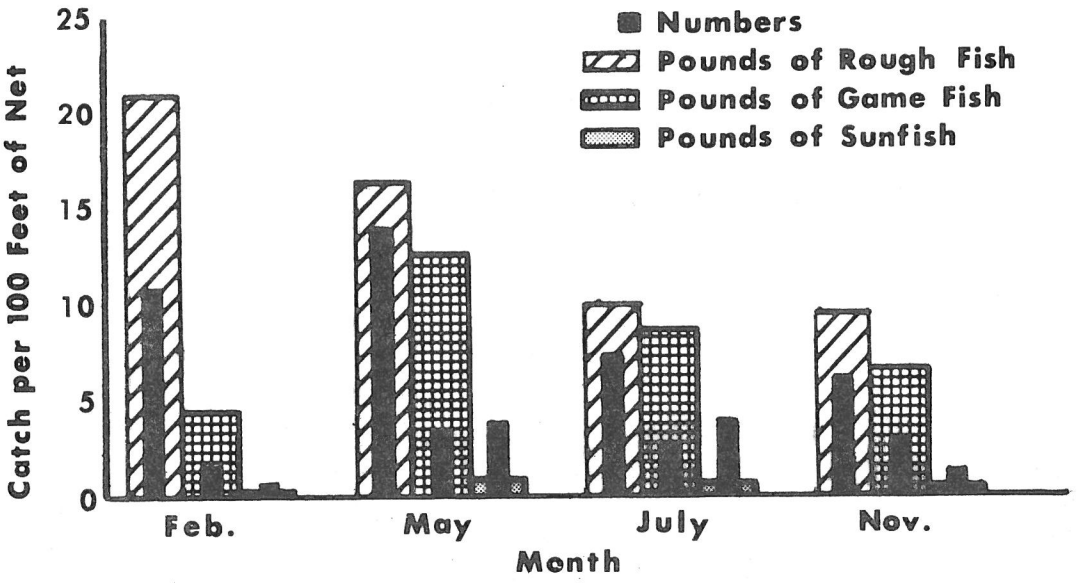

Figure 1.--Comparison of the rough fish, game fish, and sunfish caught per 100 feet of gill net during each of 4 gill netting surveys on Canyon Lake in 1972.

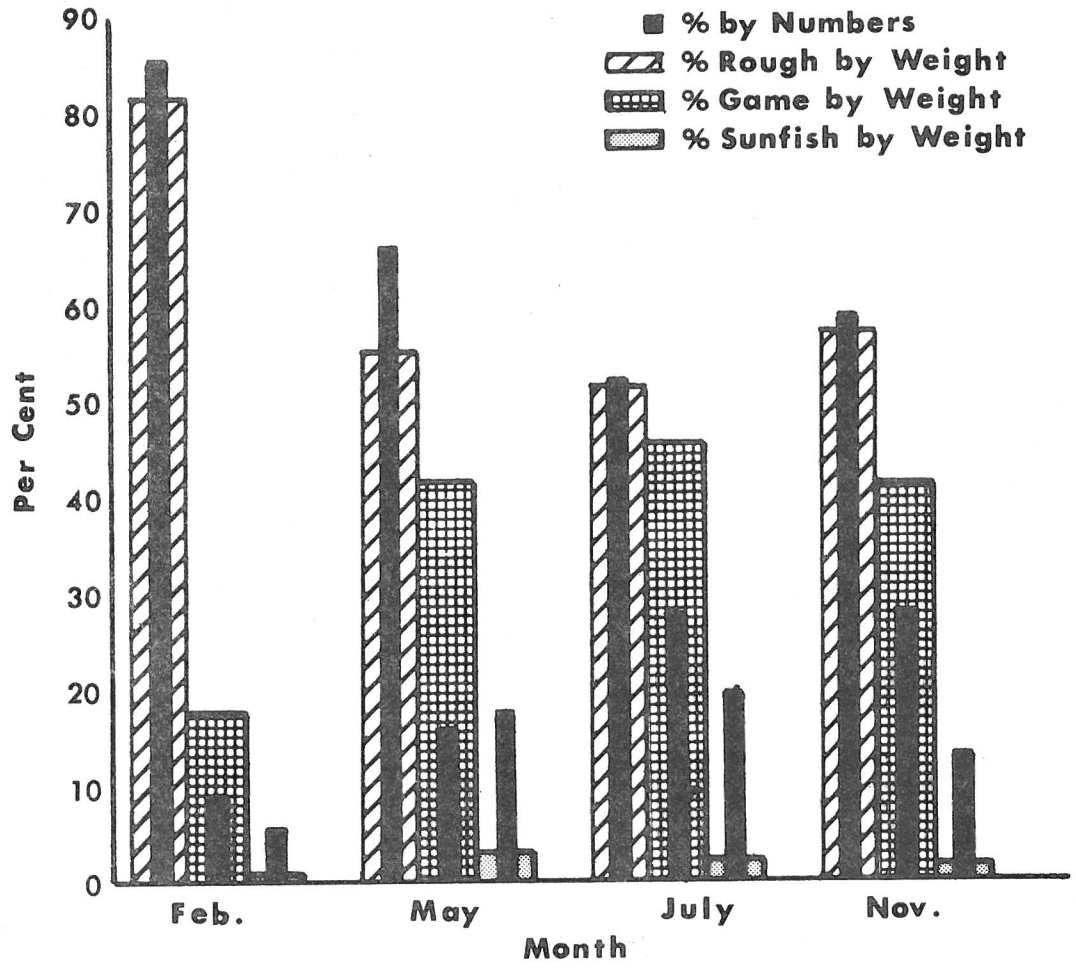

Figure 2.--Comparison of the percentages of rough fish, game fish, and sunfish (weight and number) caught during each of 4 gill netting surveys on Canyon Lake in 1972.

Similar graphs drawn using data from only one or two netting surveys a year did not show this. This further indicates the need for numerous yearly netting surveys on each lake.

Plans have been made to stock Canyon Lake with walleye and/or smallmouth bass, if the fish can be obtained for stocking. Quarterly netting should be continued on this lake.

Lake L. B. J.

Lake L. B. J. is a large (surface area=6,375 acres), relatively shallow (mean depth=22 feet) lake loacted in Burnet and Llano Counties. The lake was formed in 1951 by the impoundment of the waters of the Colorado River. It is controlled by the Lower Colorado River Authority and its waters are to be used for hydroelectric power.

Lake L. B. J. was netted five times during 1972. A total of 2,097 fish weighing 2,002.44 pounds were taken from a total of 75 overnight, bottom gill net sets (15 gill net sets per netting survey). Rough fish comprised 68.63 per cent of the catch by number and 72.49 per cent by weight, with river carpsuckers accounting for the greatest number and biomass. Game fish comprised 23.42 per cent by number and 36.66 per cent by weight, with white bass accounting for the greatest number and biomass (Table 3).

Figure 4 shows the catch per 100 feet of net of rough fish, game fish and sunfish taken during each netting survey. Note the small size of the game fish. Most of these are hatchery stocked fish and are only 1.5 to 2 years old. The rough fish are also relatively small except during the March netting survey. The fish caught at this time (primarily river carpsucker and carp) averaged approximately 1.75 pounds and had fully developed gonads. From this graph, it is again easy to see the need for numerous netting surveys each year.

Quarterly netting surveys will be continued on Lake L. B. J. in order to evaluate the long term effect of renovation. A steam generator plant is presently being constructed on Lake L. B. J. and will soon be in operation. Its effects upon the fish population of the lake will also be studied.

Lake Stillhouse Hollow

Lake Stillhouse Hollow is a large (surface area=6,430) lake located entirely within Bell County. Its mean depth is 37 feet. It was formed in 1968 by the impoundment of the waters of the Lampasas River. The lake is controlled by the Army Crops of Engineers and its primary purpose is water conservation.

Lake Stillhouse Hollow was netted quarterly during 1972. A total of 804 fish weighing 1,108.19 pounds were taken during four gill netting surveys from a total of 55 bottom gill net sets. Rough fish comprised 49.75 per cent of the catch by number and 49.60 per cent by weight, with river carpsuckers contributing the greatest biomass. Game fish made up 32.47 per cent of the catch by number and 47.88 per cent by weight, with largemouth black bass accounting for the greatest biomass (Table 4).

Figure 5 shows the catch per 100 feet of net of rough fish, game fish, and sunfish. During each survey the weight of game fish was almost equal to that of the rough fish although there were generally greater numbers of rough fish. With the numerous small rough fish which were caught during 1972, it would appear that they are beginning to dominate the fish population in the lake. However, this is not the case. Figure 6 shows the catch in number and weight of rough, game, and sunfish per 100 feet of net for the years 1968 (first year of impoundment), 1970, 1971, and 1972. There has been a steady decline in the numbers and weight of rough fish taken each year while the game fish have increased slightly. This is unusual and can not readily be explained. Did one species of rough fish account for this decrease or was there a decrease in each species? Which species accounted for the increase in game fish? Figure 7 shows the number and weight of the five major rough fish species taken in each 100 feet of net during the years listed above. There is an overall decline in the number of each species taken from 1968 through 1972. There was also a decrease in the weight of rough fish taken, with the exception of the smallmouth buffalo. Figure 8 shows the same type of data as Figure 7 for the five major game species. Although the total number of game fish caught per 100 feet of net remained approximately the same, there was a large increase in the weight of fish caught in each 100 feet of net. The number of black bass decreased from 1968 to 1972, however their size more than doubled. There were no white bass taken in 1968, but they have become increasingly more numerous until they are quite common in net surveys.

Lake Travis

Lake Travis is the second largest lake in Region 2-B with a surface area of 18,930 acres. It is a very deep lake with a mean depth of 62 feet and a maximum depth of 192 feet. The lake was formed in 1940 by the impoundment of waters of the Colorado River. It is controlled by the Lower Colorado River Authority and the lake is used for flood control, recreation, irrigation, power generation, and for municipal and industrial water supplies.

Lake Travis was netted three times during 1972. A total of 529 fish weighing 1,229.30 pounds were taken from a total of 40 overnight, bottom gill net sets. Rough fish comprised 60.87 per cent of the catch by number and 60.13 per cent by weight, with gizzard shad accounting for the greatest number and smallmouth buffalo providing the greatest biomass. Game fish comprised 31.57 per cent of the catch by number and 38.98 per cent by weight, with white bass accounting for the greatest number and flathead catfish the greates weight (Table 5).

Plans have been made to stock Lake Travis with striped bass in the near future. A program of quarterly netting should be instituted on Lake Travis to evaluate the striped bass introduction.

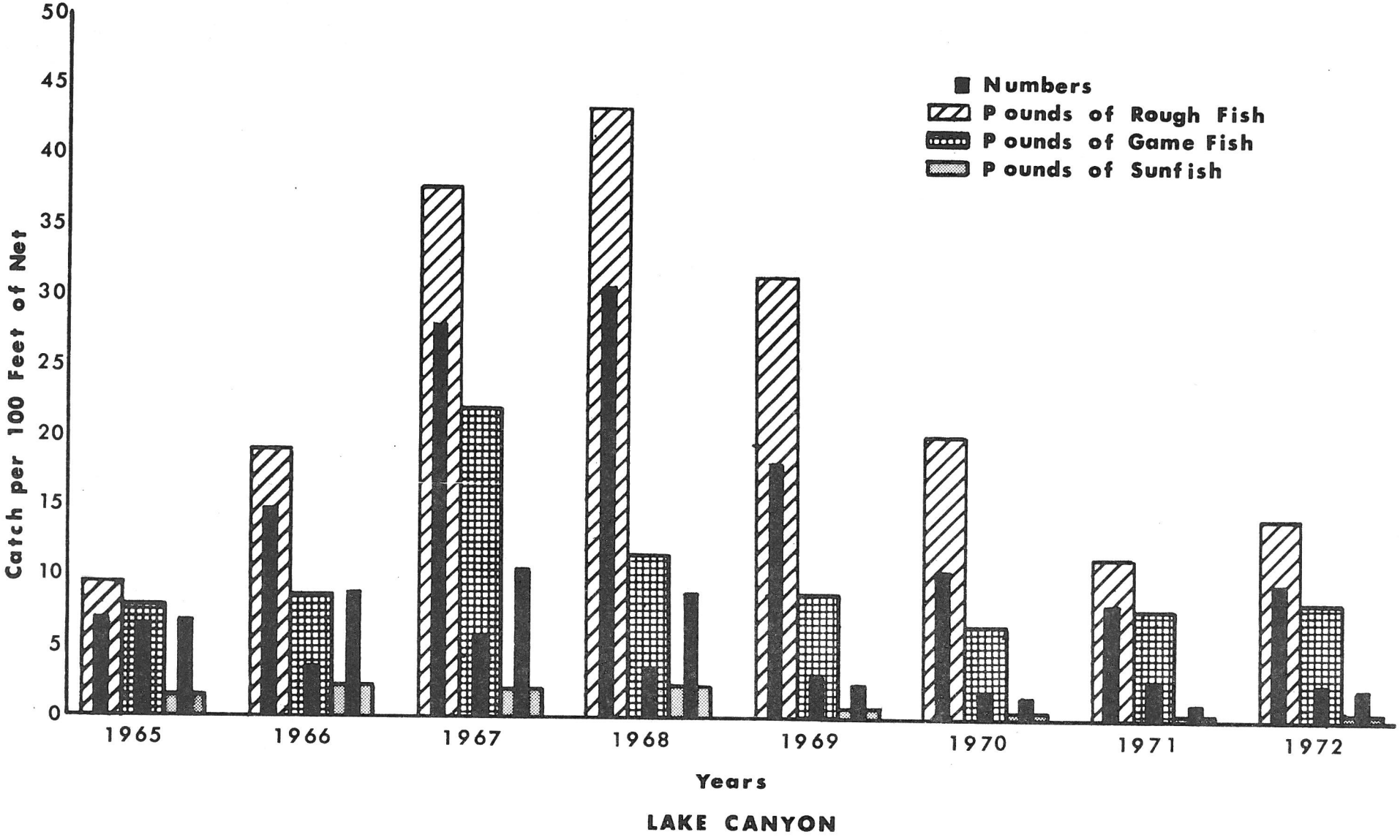

Figure 3.--Comparison of the average catch (weight and number) of rough fish, game fish, and sunfish per 100 feet of gill net during the years 1965 through 1972. There were three or more gill netting surveys conducted each year.

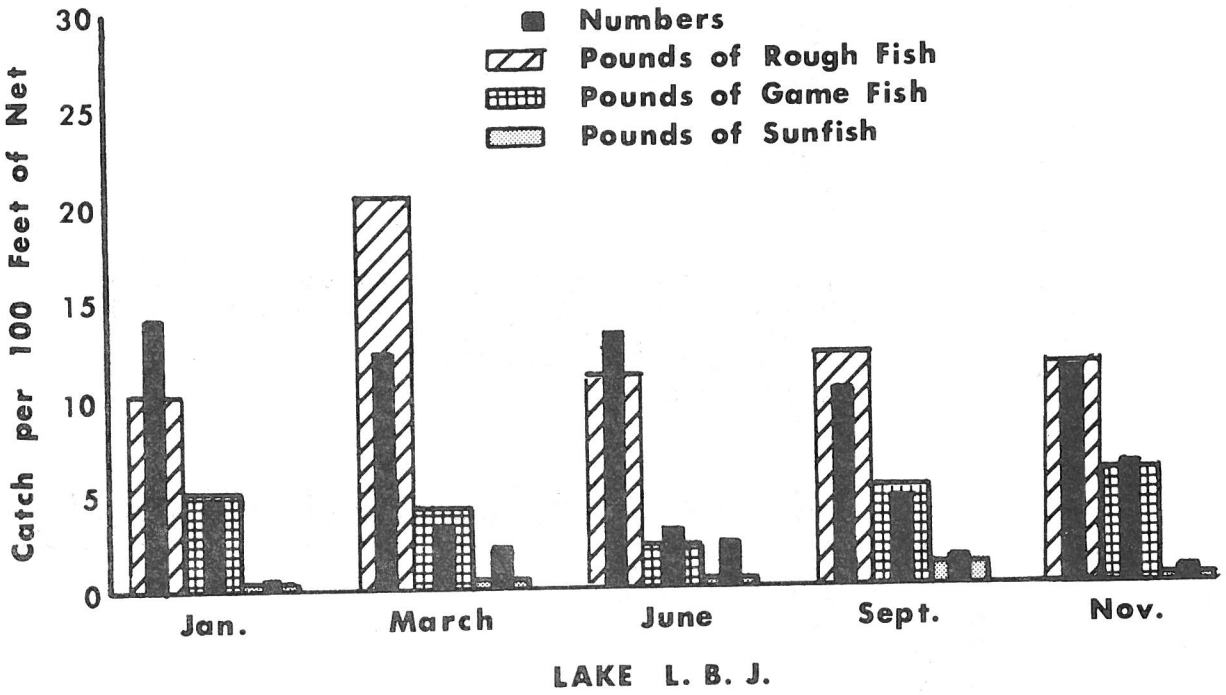

Figure 4.--Comparison of the rough fish, game fish, and sunfish caught per 100 feet of gill net during each of 5 gill netting surveys on Lake Lyndon B. Johnson in 1972.

-Table 4-

Lake Stillhouse Hollow Netting Data for 1972
55 Nets Set

Species	Number	Per Cent of Number	Weight (Pounds)	Per Cent of Weight	Average Weight
Spotted gar	8	1.00	11.44	1.05	1.43
Longnose gar	37	4.60	62.44	5.64	1.69
Gizzard shad	136	16.92	46.71	4.22	0.34
Carp	83	10.32	115.17	10.39	1.39
River carpsucker	45	5.60	155.14	14.00	3.45
Smallmouth buffalo	22	2.74	90.21	8.15	4.11
Gray redhorse sucker	65	8.08	63.64	5.74	0.98
Yellow bullhead catfish	1	0.12	0.50	0.05	0.50
Channel catfish*	56	6.97	147.12	13.28	2.63
Flathead catfish*	12	1.49	57.75	5.22	4.81
White bass*	89	11.07	124.10	11.20	1.39
Warmouth sunfish	1	0.12	0.19	0.02	0.19
Green sunfish	7	0.87	1.38	0.12	0.19
Redbreast sunfish	1	0.12	0.13	0.01	0.13
Bleugill sunfish	118	14.68	24.01	2.17	0.20
Longear sunfish	2	0.25	0.27	0.02	0.14
Redear sunfish	14	1.74	2.03	0.18	0.14
Largemouth black bass	59	7.34	157.80	14.24	2.67
Spotted black bass	18	2.24	28.89	2.61	1.61
White crappie*	27	3.36	14.78	1.33	0.55
Freshwater drum	3	0.37	4.13	0.37	1.38
Total	804	100.00	1108.19	100.00	

*Designates Game Fish Species

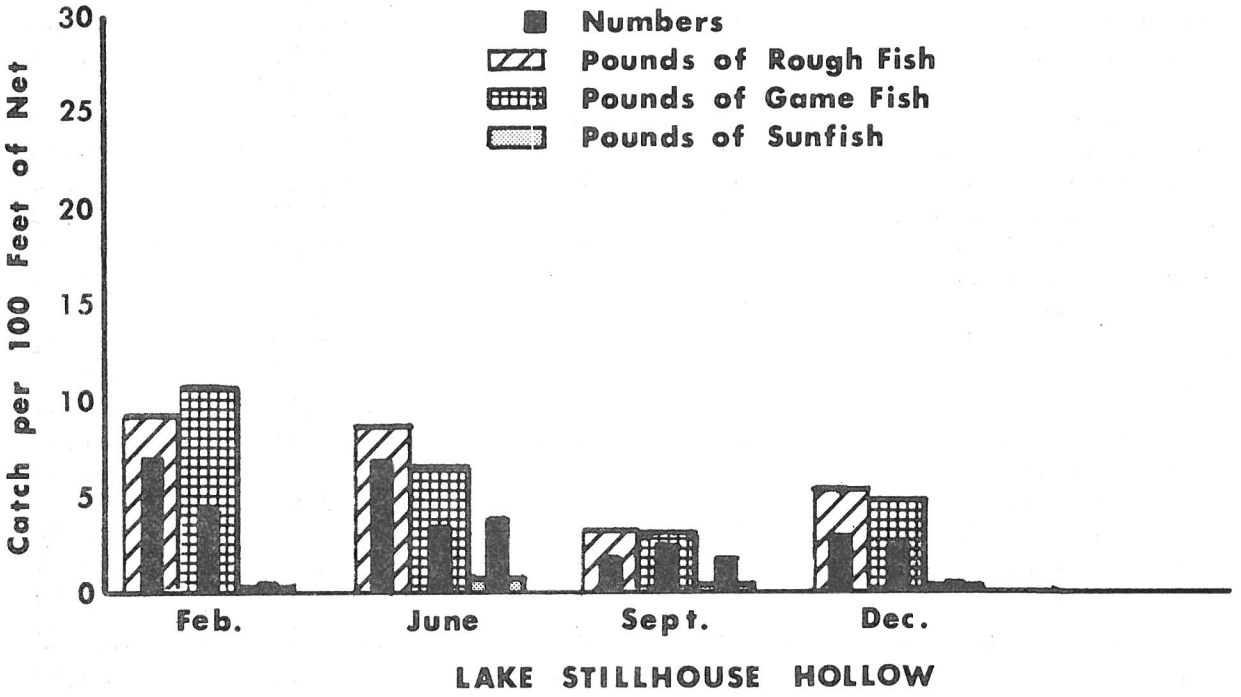

Figure 5.--Comparison of the rough fish, game fish, and sunfish caught per 100 feet of gill net during each of 4 gill netting surveys on Lake Stillhouse Hollow in 1972.

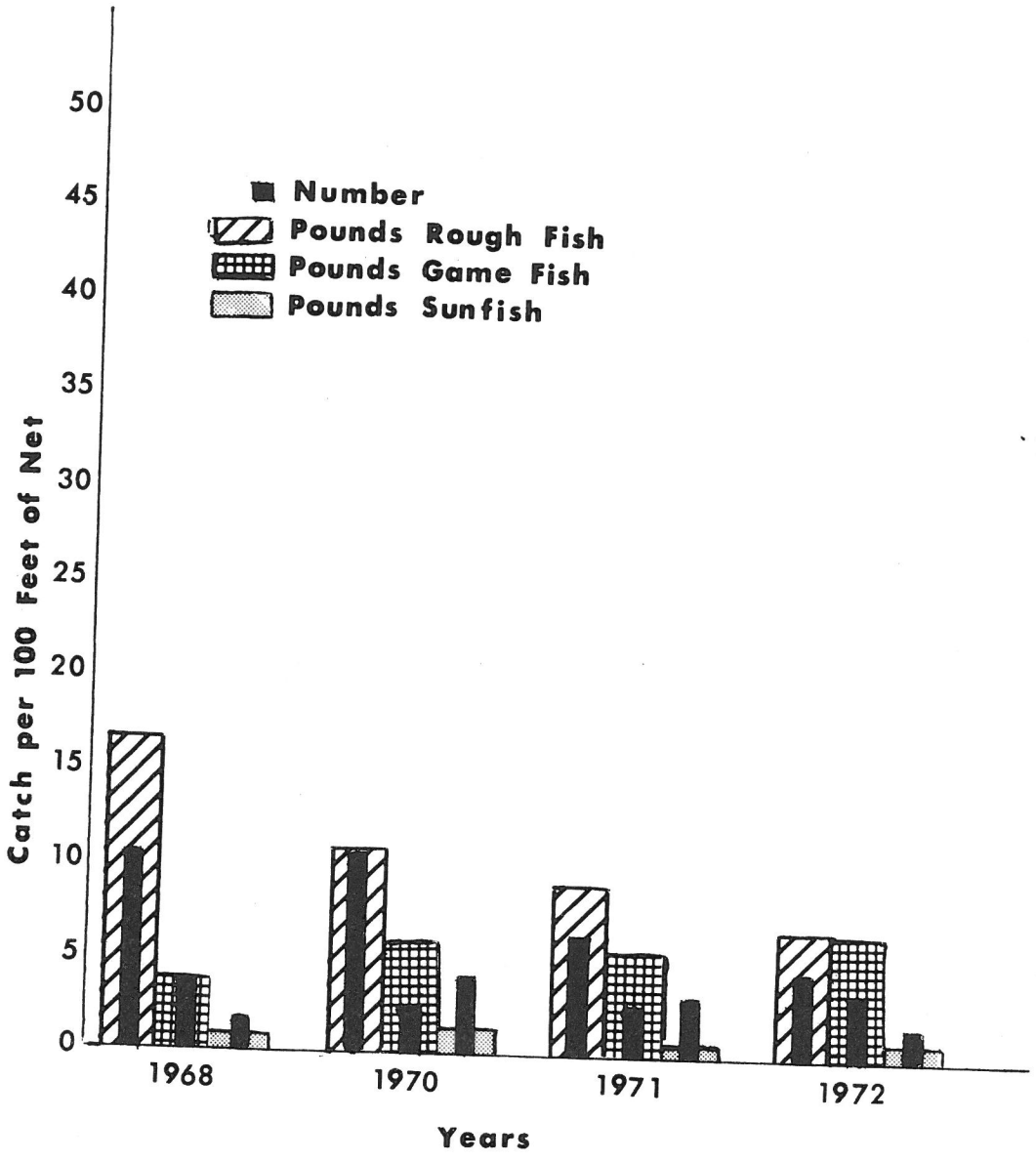

Figure 6.--Comparison of the average catch (weight and number) of rough fish, game fish, and sunfish per 100 feet of gill net during the years 1968, 1970, 1971 and 1972. There were three or more gill netting surveys conducted each year.

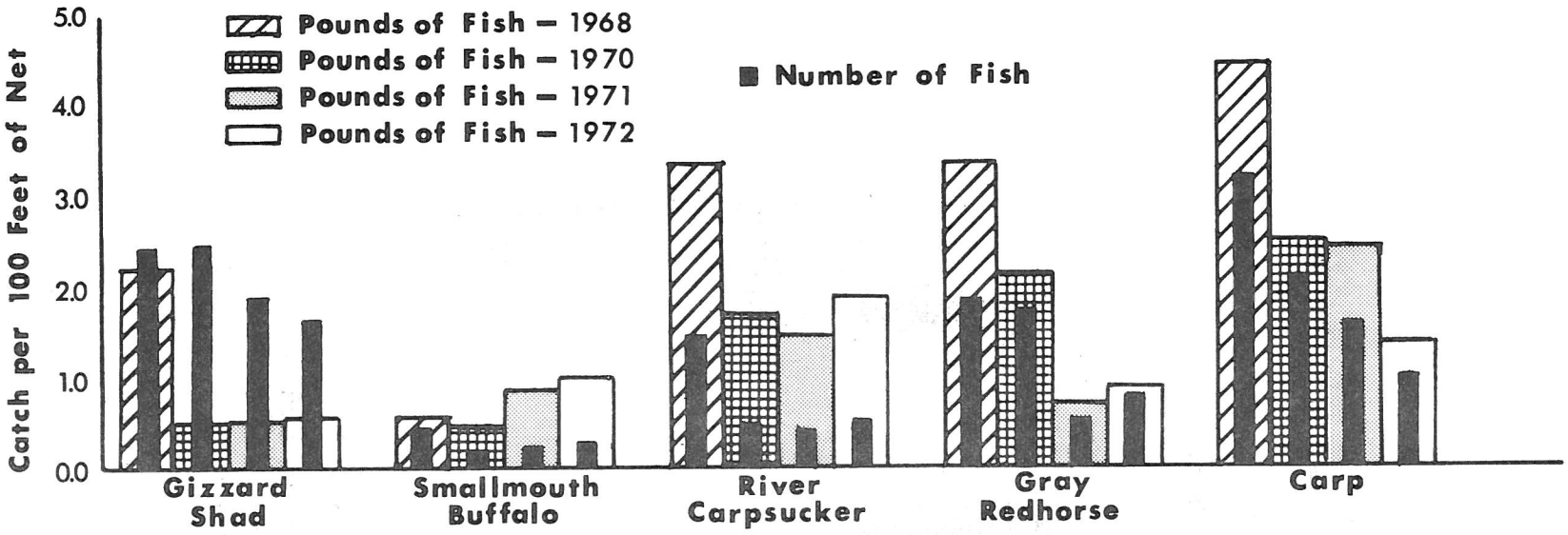

Figure 7.--Comparison of the five major rough fish species caught per 100 feet of gill net (weight and number) in Lake Stillhouse Hollow for the years 1968, 1970, 1971 and 1972.

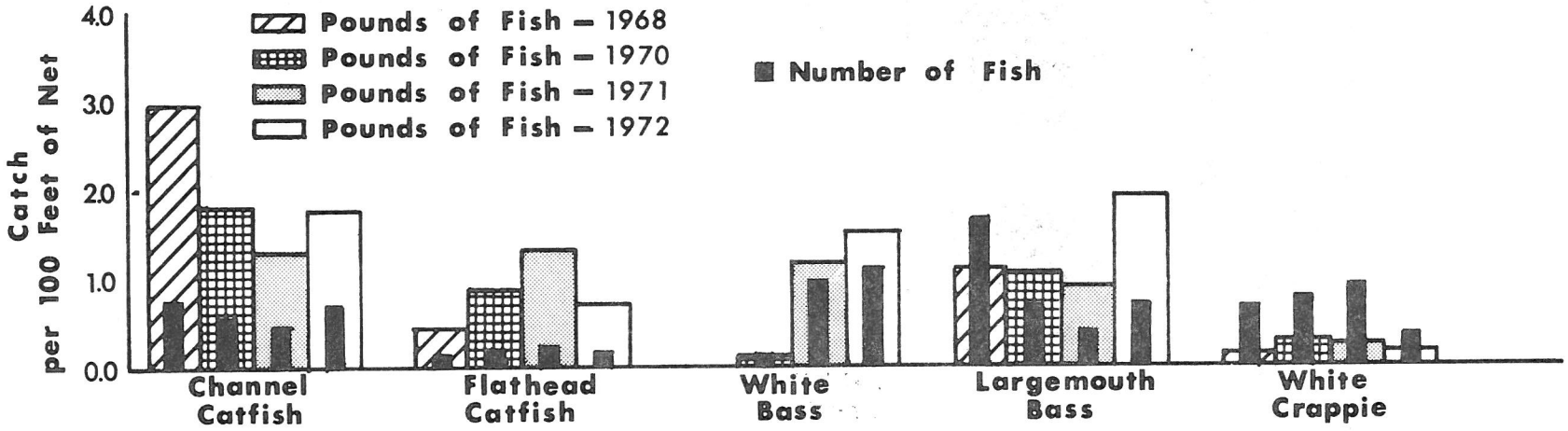

Figure 8.--Comparison of the five major game fish species caught per 100 feet of gill net (weight and number) in Lake Stillhouse Hollow for the years 1968, 1970, 1971 and 1972.

Lake Belton

Lake Belton, located in Bell County, has a maximum surface area of 12,300 acres and a mean depth of 37 feet. It was formed in 1954 by the impoundment of the waters of the Leon River. Lake Belton is under the control of the Army Corps of Engineers and is used primarily for flood control

Lake Belton was netted twice during 1972. A total of 668 fish weighing 1,539.90 pounds were taken from a total of 30 overnight, bottom gill net sets. Rough fish comprised 45.66 per cent of the catch by number and 80.90 per cent by weight, with smallmouth buffalo accounting for the greatest number and weight. Game fish comprised 31.43 per cent of the catch by number, but only 17.10 per cent by weight. White bass accounted for almost half of the game fish by number and one-third by weight (Table 6).

Largemouth black bass were recently stocked in Lake Belton.

Lake Buchanan

Lake Buchanan, located in Burnet and Llano Counties, is the largest lake in Region 2-B, with a surface area of 23,200 acres. The mean depth of the lake is 43 feet, with a maximum depth of 132 feet. It was formed in 1937 by the impoundment of the waters of the Colorado River. The lake is controlled by the Lower Colorado River Authority and the water is used for irrigation, municipal water supply and for hydroelectric power.

Lake Buchanan was netted only once during 1972. The results of that netting survey is presented in Table 7.

Lake Inks

Lake Inks, located in Burnet and Llano Counties, has a surface area of 803 acres and a mean depth of 23 feet. The maximum depth is only 60 feet. Inks Lake was formed in 1938 by the impoundment of waters of the Colorado River. It is controlled by the Lower Colorado River Authority. The water is used for hydroelectric power and recreation.

Lake Inks was netted one time during 1972. The results of that netting survey are presented in Table 8.

-Table 5-

Lake Travis Netting Data for 1972
40 Nets Set

Species	Number	Per Cent by Number	Weight (Pounds)	Per Cent by Weight	Average Weight
Spotted gar	3	0.57	15.00	1.22	5.00
Gizzard shad	157	29.68	79.73	6.49	0.51
Carp	19	3.59	60.71	4.94	3.20
River carpsucker	82	15.50	208.53	16.96	2.54
Smallmouth buffalo	40	7.56	354.51	28.84	8.86
Gray redhorse sucker	5	0.95	7.44	0.61	1.49
Channel catfish*	19	3.58	38.07	3.10	2.00
Blue catfish*	1	0.19	7.50	0.61	7.50
Flathead catfish*	35	6.62	295.70	24.05	8.45
White bass*	55	10.40	73.79	6.00	1.34
Warmouth sunfish	4	0.76	0.82	0.07	0.21
Green sunfish	6	1.13	1.32	0.11	0.22
Redbreast sunfish	7	1.32	2.50	0.20	0.36
Bluegill sunfish	21	3.97	3.51	0.29	0.17
Longear sunfish	2	0.38	1.25	0.10	0.63
Largemouth black bass*	35	6.62	40.96	3.33	1.17
Spotted black bass*	4	0.76	5.94	0.48	1.49
White crappie*	18	3.40	17.32	1.41	0.96
Rio Grande perch	6	1.13	1.50	0.12	0.25
Freshwater drum	10	1.89	13.20	1.07	1.32
Total	529	100.00	1229.30	100.00	

* Designates Game Fish Species

-Table 6-

Lake Belton Netting Data for 1972
30 Nets Set

Species	Number	Per Cent by Number	Weight (Pounds)	Per Cent by Weight	Average Weight
Spotted gar	12	1.80	26.07	1.69	2.17
Longnose gar	19	2.84	99.57	6.47	5.24
Gizzard shad	39	5.84	24.08	1.56	0.62
Carp	7	1.05	55.38	3.60	7.91
River carpsucker	94	14.07	283.02	18.02	3.01
Smallmouth buffalo	95	14.22	708.26	45.99	7.46
Gray redhorse sucker	6	0.90	12.06	0.78	2.01
Channel catfish*	28	4.19	67.28	4.38	2.40
Flathead catfish*	2	0.30	6.50	0.42	3.25
White bass*	99	14.82	119.38	7.75	1.21
Green sunfish	7	1.05	8.63	0.56	1.23
Redbreast sunfish	36	5.39	2.08	0.14	0.06
Bluegill sunfish	95	14.22	17.25	1.12	0.18
Longear sunfish	10	1.50	1.07	0.07	0.11
Redear sunfish	3	0.45	1.57	0.10	0.32
Spotted sunfish	2	0.30	0.13	0.01	0.07
Largemouth black bass*	25	3.74	9.26	0.60	0.37
White crappie*	23	3.44	37.69	2.45	1.64
Freshwater drum	33	4.94	23.17	1.50	0.70
Total	668	100.00	1539.90	100.00	

* Designates Game Fish Species

-Table 7-

Lake Buchanan Netting Data for 1972
15 Nets Set

Species	Number	Per Cent by Number	Weight (Pounds)	Per Cent by Weight	Average Weight
Longnose gar	10	1.81	26.44	2.80	2.64
Gizzard shad	147	26.53	53.21	5.63	0.36
Carp	18	3.25	44.25	4.68	2.46
River carpsucker	166	29.96	493.96	52.27	2.97
Smallmouth buffalo	12	2.18	103.94	11.00	8.66
Channel catfish*	27	4.87	52.95	5.60	1.96
Flathead catfish*	9	1.62	90.75	9.60	10.08
White bass*	14	2.54	14.14	1.51	1.01
Green sunfish	4	0.72	0.94	0.10	0.24
Warmouth sunfish	8	1.44	2.82	0.30	0.35
Bluegill sunfish	65	11.73	8.44	0.89	0.13
Longear sunfish	26	4.69	3.88	0.41	0.15
Redear sunfish	8	1.44	2.00	0.21	0.25
Largemouth black bass*	10	1.81	12.00	1.27	1.20
Spotted black bass*	8	1.44	5.13	0.54	0.64
White crappie*	4	0.72	3.63	0.38	0.90
Freshwater drum	18	3.25	26.56	2.81	1.47
Total	554	100.00	945.04	100.00	

* Designates Game Fish Species

-Table 8-

Results of Lake Inks Gill Netting for 1972
10 Nets Set

Species	Number	Per Cent of Number	Weight (Pounds)	Per Cent of Weight	Average Weight
Spotted gar	1	0.24	3.63	0.59	3.63
Longnose gar	2	0.48	5.81	0.94	2.90
Gizzard shad	215	51.56	81.26	13.14	0.38
Carp	18	4.32	54.88	8.88	3.04
River carpsucker	44	10.55	153.77	24.89	3.49
Smallmouth buffalo	25	5.98	216.20	34.97	8.65
Gray redhorse sucker	1	0.24	3.63	0.59	3.63
Channel catfish*	6	1.44	6.88	1.11	1.15
Flathead catfish*	6	1.44	47.69	7.71	7.95
Yellow bullhead catfish	1	0.24	0.25	0.04	0.25
White bass*	9	2.16	16.47	2.66	1.83
Green sunfish	14	3.36	2.31	0.37	0.15
Bluegill sunfish	53	12.71	4.56	0.74	0.09
Longear sunfish	6	1.44	0.63	0.10	0.10
Largemouth black bass*	13	3.12	16.00	2.59	1.23
White crappie*	1	0.24	0.56	0.09	0.56
Freshwater drum	2	0.48	3.63	0.59	1.82
Total	417	100.00	618.16	100.00	

* Designates Game Fish Species

Fish Harvest Regulations

Existing fish harvest regulations are considered to be adequate for the current fishery resources; therefore, no changes are recommended.

Vegetation Control

The impoundments surveyed this segment contained only sparse amounts of aquatic vegetation; therefore, no control measures are necessary.

Recommendations:

1. Due to the high rough fish population (primarily gizzard shad) in Canyon Reservoir, it is recommended that an attempt be made to establish walleye pike and/or smallmouth bass. Quarterly netting surveys should be continued so that the effects of walleye or smallmouth bass stockings can be evaluated.

2. Plans have been made to stock Lake Travis with striped bass. Quarterly netting surveys should be conducted on Lake Travis to evaluate the effects of striped bass stockings.

3. No management recommendations are necessary for Lake Inks at present. Lake Inks will be netted quarterly during 1973.

4. Quarterly netting should be continued on Lake Lyndon B. Johnson so that the long term effects of the renovation in April of 1971 can be evaluated.

5. Lake Stillhouse Hollow will not be in Region 2-B in 1973. No management recommendations are necessary at this time; however, monitoring of population trends should be continued (note Figure 6).

6. It is recommended that this job be continued to provide valid fishery management recommendations through population sampling data. It is recommended that four or five lakes be designated for intensive netting surveys each year. These lakes should be changed each year so that each lake in the region is surveyed intensively once every two to three years. Netting data on the lakes chosen for intensive study should be supplemented with seining and cove rotenone surveys.

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